SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-46

Name: Owens Lake **County**: Perkins

Legal description: Sec 4, T 17N, R 14E
Location from nearest town: 3 miles east, 4 miles south of Bison, SD
Dates of present survey: June 18-19, 2013
Date last surveyed: July 20-21, 2012
Management classification: Warmwater semi-permanent

Primary Species: (game and forage)	Secondary and other species:
1. Black Bullhead	1. Largemouth Bass
2. Northern Pike	2. Yellow Perch
3.	3. Bluegill

PHYSICAL CHARACTERISTICS

Surface Area: 96 acres **Watershed**: 57,000 acres
Maximum depth: 15 feet **Mean depth**: 6.3 feet
Lake elevation at survey (from known benchmark): four feet below full pool

Ownership of lake and adjacent lakeshore property:

Most of the land around Owens Lake is owned by the Department of Game, Fish and Parks and is managed as a Game Production Area.

Fishing Access:

Owens Lake has boat access with a rough, plank boat ramp on the south side. Shore access is limited by heavy vegetation around the shoreline and heavy submergent vegetation around the entire lake.

Observations of Water Quality and Aquatic Vegetation:

Emergent vegetation was present in the extremely clear water in depths under seven feet deep. Approximately 70 percent of the shoreline is covered by cattails or reeds. Department personnel identified no pollution problems during this survey.

Observations on conditions of structures (i.e. spillway, boat ramps, roads, etc.):

The dam spillway appeared in good condition. The boat ramp is a rough concrete plank ramp which is starting to be undercut by wave action in spots.

MANAGEMENT OBJECTIVES

Objective 1. Maintain moderate densities of Yellow Perch and Bluegill and PSD's $\geq$ 30.

Objective 2. Maintain a mean trap net CPUE of stock-length Black Bullhead <100 and PSD between 30 and 60.

Objective 3. Increase Largemouth Bass and Northern Pike numbers to moderate to high densities to keep Black Bullhead and other panfish densities and size structure within management objective ranges.

BIOLOGICAL DATA

Sampling Effort and Catch

Trap nets and experimental gill nets were used on June 18-19, 2013 to sample adult fish populations in the reservoir (Figure 1). Trap nets were modified fyke nets consisting of a 1.3 X 1.5 m (4.2 ft X 4.9 ft) frame, 19.1 mm (0.75 in) mesh and a 1.2 X 23 m (3.9 X 75.5 ft) lead. The gill nets were experimental-type measuring 45.7 m (150 ft) long and 1.8 m (6 ft) deep with six 7.6 m (25 ft) panels with bar mesh sizes: 12.7 mm (0.5 in), 19.1 mm (0.75 in), 25.4 mm (1.0 in), 31.8 mm (1.25 in), 38.1 mm (1.5 in), and 50.8 mm (2.0 in). The net sampling consisted of four trap net nights and one gill net night and catch data is displayed in Tables 1 and 2. Discussion on selected fish species follows and completes this report.

Table 1. Catch data from all fish species collected in one experimental gill net in Owens Lake, South Dakota, June 18-19, 2013. CPUE values with 80% confidence intervals in parentheses. PSD, PSD-P and *Wr*≥S values with 90% confidence intervals in parentheses

Species	N	CPUE	CPUE-S	PSD	PSD-P	*Wr*≥S
Northern Pike	9	9.0	9.0	100	11	95.6 (7.0)

Table 2. Catch data from all species collected in four trap nets in Owens Lake, South Dakota, June 18-19, 2013. CPUE's with 80% confidence intervals in parentheses. PSD, PSD-P and *Wr*≥S with 90% confidence intervals in parentheses

Species	N	CPUE	CPUE-S	PSD	PSD-P	*Wr*≥S
Black Bullhead	14	3.5 (3.0)	3.5 (3.0)	100	29 (23)	114.0 (4.1)
Northern Pike	6	1.5 (0.8)	1.5 (0.8)	83 (33)	33 (43)	93.3 (8.8)

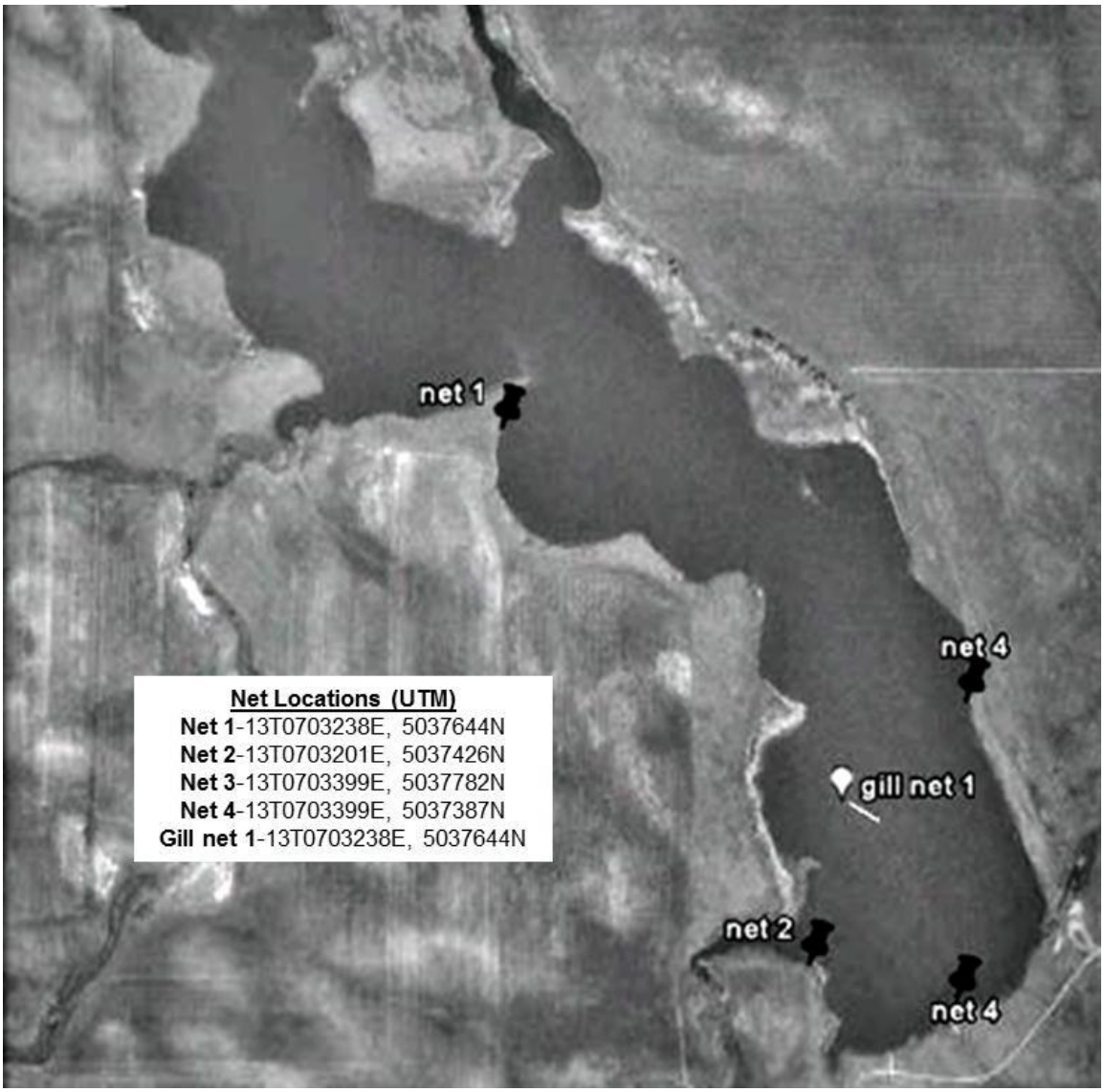

Figure 1. Locations, with GPS coordinates, of the experimental gill net (gill net) and trap nets (net) during the fish survey of Owens Lake, South Dakota, 2013.

Black Bullheads

In 2013, Black Bullhead was the most abundant species sampled in trap nets at Owens Lake with a CPUE of 3.5 (Table 2). The single gill net caught no Black Bullheads. Last year CPUE was higher with a gill net CPUE of 91 and trap net CPUE of 66.8. Stock indices are above objective levels with a PSD of 100 and a PSD-P of 29 from the trap net sample. Black Bullhead condition was excellent with average relative weight for stock length and larger fish ($Wr \geq S$) of 114. Length frequency histograms from the past few years appear to indicate excellent growth (Figure 2).

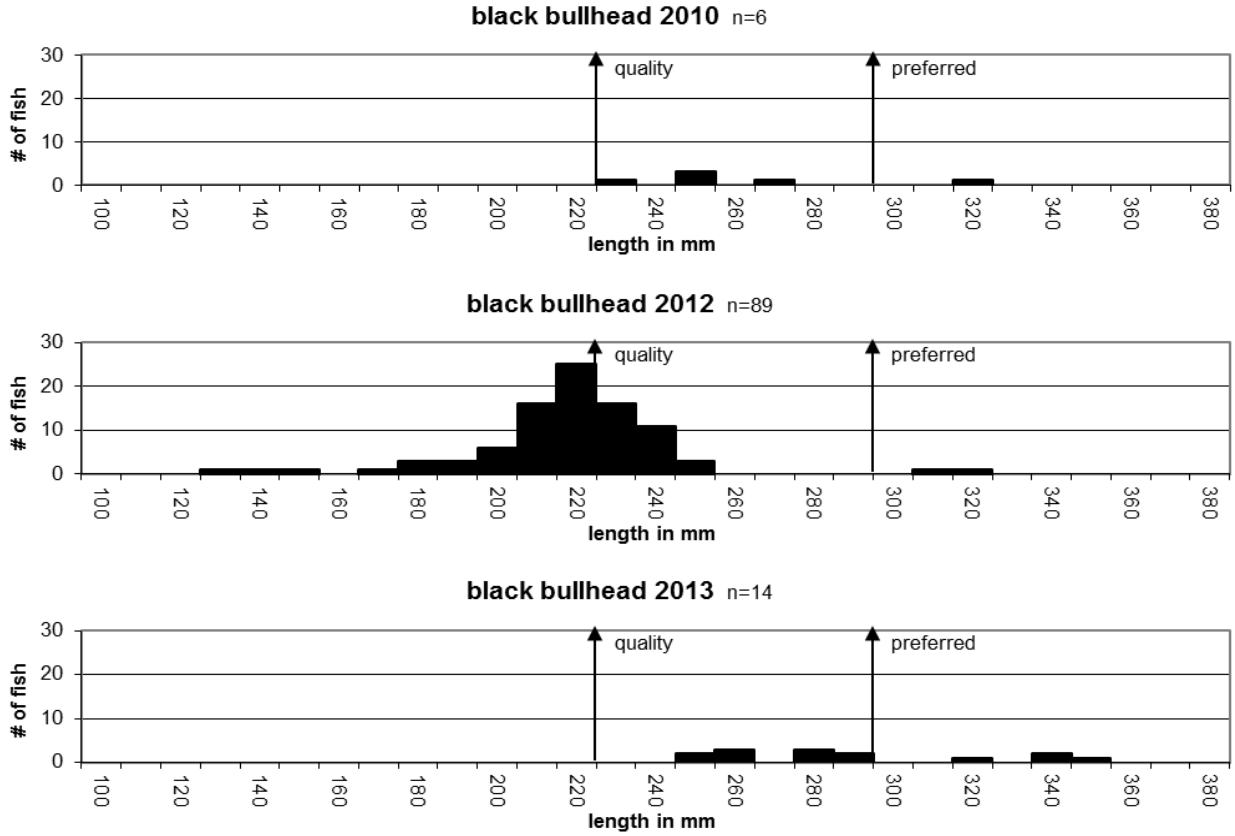

Figure 2. Length frequencies of Black Bullheads from Owens Lake, Perkins County, South Dakota, 2010, 2012-2013.

Northern pike

In 2012, gill net CPUE was nine and trap net CPUE was 4.8. Northern Pike density was similar this survey with a gill net CPUE of nine and a trap net CPUE of 1.5 (Tables 1 and 2). Size structure was high with a PSD of 100 in the gill net and 83 in the trap nets indicating low recruitment. Fish condition was good with a mean *Wr*≥S of 95.6 from the gill net sample. Only one fish was sampled under quality length indicating low levels of recruitment which is probably related to low water levels and lack of suitable spawning habitat (Figure 3).

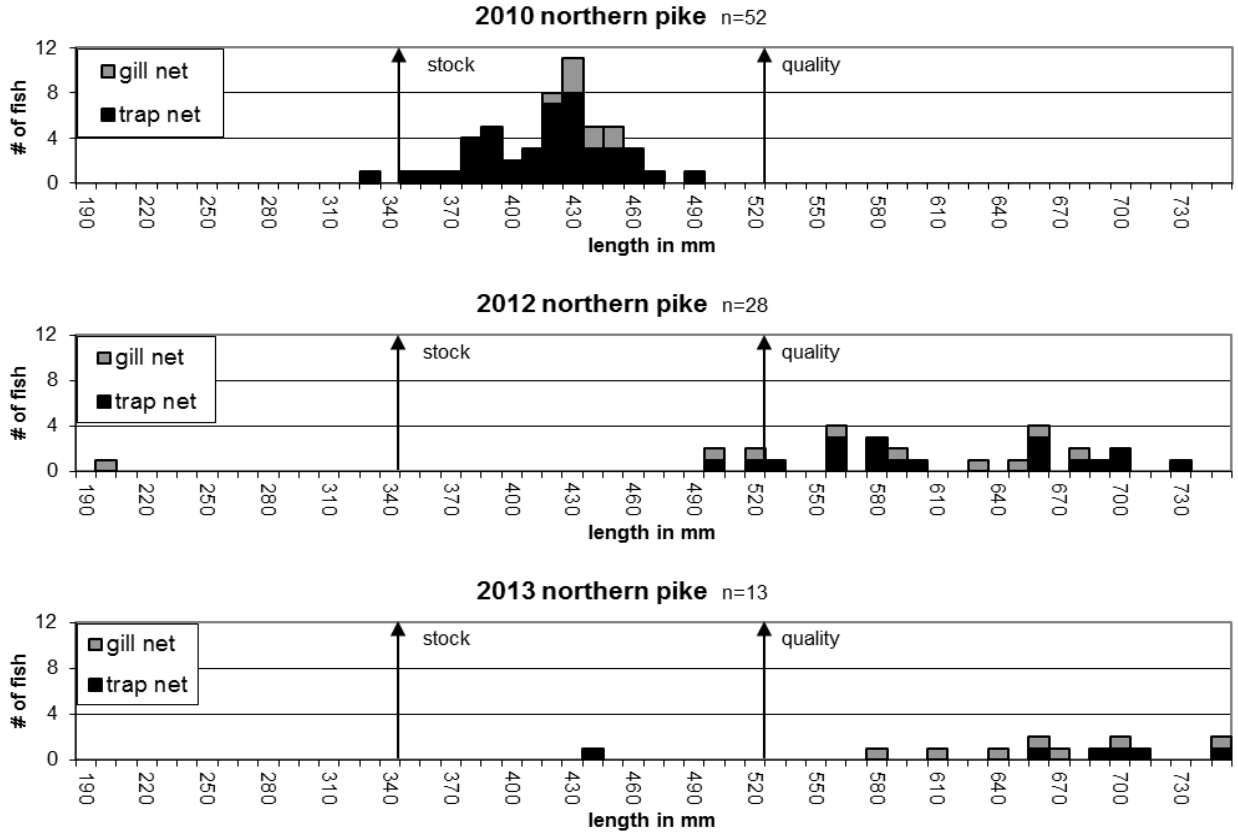

Figure 3. Length frequencies of Northern Pike sampled in gill nets and trap nets from Owens Lake, Perkins County, South Dakota, 2010, 2012-2013.

RECOMMENDATIONS

1. Resurvey in 2014 to check fish populations and determine if Bluegill and Largemouth Bass introductions were successful.

APPENDIX

Appendix A. Stocking history, including year, number stocked, species and size of fish stocked into Owens Lake, Perkins County, South Dakota, 1995-2013.

Year	Number	Species	Size
1995	197	Northern Pike	Adult
1996	16,230	Northern Pike	Adult
1997	32,000	Northern Pike	Fingerling
2005	368	Yellow Perch	Adult
2009	250	Yellow Perch	Adult
2010	97,600	Northern Pike	Fry
	5,560	Largemouth Bass	Fingerling
2012	572	Yellow Perch	Adult
	835	Bluegill	Adult
	320	Largemouth Bass	Adult